

What is claimed is:

5

1. A lens, comprising an optic zone having a first region that is a multifocal region, a second region that is a monofocal region, and a third region of alternating distance optical power segments and near optical power segments wherein the near optical power segments are asymmetrical.

10

2. The lens of claim 1, wherein the lens is a contact lens.

3. The lens of claim 2, wherein the first, second and third regions are located on a front surface of the lens.

15

4. The lens of claim 2, wherein the lens further comprises a cylinder power.

5. The lens of claim 3, wherein a back surface of the lens is a toric surface.

20

6. The lens of claim 3, wherein a back surface of the lens inversely corresponds to an individual's corneal topography.

7. The lens of claim 2, wherein the first multifocal region is designed so that a position, an amplitude, and a width for the region is determined by the following equation:

25

30

$$Y = \left[ \left[ \frac{8a^3}{4a^2 + P(x+k)^2} \right]^s \right] * \text{Add}$$

wherein:

Y is an add power at any point x on a surface within the multifocal region;

x is a point on the lens surface;

5 a is 0.5;

k is a point within the multifocal region at which there is a power peak;

P is greater than about 0 and less than about 15;

S is greater than about 0 and less than about 30; and

Add is a value that is equal to or less than a difference in power between the near  
10 vision power and distance vision power of multifocal region.

8. The lens of claim 2, wherein the multifocal region is designed so that  
a speed or contour, meaning, the slope of the power change from near to distance  
power, for the zone is determined by the following equation:

15

$$Add_{(x)} = Add_{peak} * (1/(a * (1 + (x / x_c)^{2n})))$$

wherein:

Add<sub>(x)</sub> is an actual instantaneous add power at any point x in the multifocal region;

20 x is a point in the multifocal region at a distance x from a center of the surface;

a is a constant;

Add<sub>peak</sub> is an add power required for near vision correction;

x<sub>c</sub> is a midpoint in a power transition from distance to near power in the multifocal  
region;

25 n is a variable between 1 and 40; and

Add is a value that is equal to the difference the near vision power and distance  
vision power in the multifocal region.

30 9. The lens of claim 2, wherein the multifocal region is designed so that  
a speed or contour for the zone is determined by the following equation:

$$Add_{(x)} = Add_{peak} * (1/(a * (1 + (x / x_c)^2) * n))$$

(III)

wherein:

- 5     $Add_{(x)}$  is actual instantaneous add power at any point x on a surface of the lens within the multifocal region;  
      x is a point on the lens surface at a distance x from the center;  
      a is a constant and preferably is 1;  
       $Add_{peak}$  is the full peak dioptric add power within the multifocal region;  
 10    $x_c$  is the cutoff semi-diameter within the multifocal region;  
      n is a variable between 1 and 40, preferably between 1 and 20; and  
      Add is a value that is equal to the difference in power between the near vision power and distance vision power of the multifocal region.
- 15            10.    The lens of claim 2, wherein the multifocal region is designed so that a speed and a contour for the region is determined by the following equation:

$$Add_{(x)} = Add_{peak} * (1/(a * (1 + (x / x_c)^d) * n))$$

(IV)

20    wherein:

- $Add_{(x)}$  is actual instantaneous add power at any point x on a surface of the lens within the multifocal region;  
      x is a point on the lens surface at a distance x from the center;  
      a is a constant and preferably is 1;  
 25    d is an arbitrary value between 1 and 40;  
       $Add_{peak}$  is the full peak dioptric add power within the multifocal region;  
       $x_c$  is the cutoff semi-diameter within the multifocal region;  
      n is between 1 and 40, preferably between 1 and 20; and  
      Add is a value that is equal to the difference in power between the near vision power  
 30    and distance vision power of the multifocal region.

11. A method of designing a lens, comprising the step of providing an optic zone having a first region that is a multifocal region, a second region that is a monofocal region, and a third region of alternating distance optical power segments  
5 and near optical power segments wherein the near optical power segments are asymmetrical.

12. A method of correcting presbyopia, comprising the step of providing an optic zone having a first region that is a multifocal region, a second region that is  
10 a monofocal region, and a third region of alternating distance optical power segments and near optical power segments wherein the near optical power segments are asymmetrical.